

ABSTRACT OF THE DISCLOSURE

In one embodiment, a pre-driver generates pre-driving signals based on control signals provided by a control circuit. The pre-driver has pre-driver power and ground connections. The pre-driving signals operate at a frequency band. A driver generates an output signal based on the pre-driving signals at an output pad. The output signal has a slew rate. The driver has driver power and ground connections. A low pass filter is coupled between the pre-driver and the driver power and ground connections to reduce the effect of noise at the pre-driving signals. The low pass filter has a cut-off frequency corresponding to the frequency of noise. In another embodiment, a plurality of pre-drivers generates pre-driving signals based on control signals provided by a control circuit. The pre-drivers have pre-driver power and ground connections. A plurality of drivers generates a plurality of output signals based on the pre-driving signals at output pads of an integrated circuit. Each of the output signals has a slew rate. The drivers have driver power and ground connections. On-die pre-driver power and ground planes are coupled to the pre-driver power and ground connections on die of the integrated circuit, respectively. On-die driver power and ground planes are coupled to the driver power and ground connections on-die of the integrated circuit, respectively. The driver power and ground planes are separated from the pre-driver power and ground planes on the die, and/or on the package to maintain the desired slew rate.